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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,008	10/19/2001	Yoshihisa Yamada	0054-0243P	7117

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EXAMINER	
ROSARIO-VASQUEZ, DENNIS	
ART UNIT	**PAPER NUMBER**
2621	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/982,008	YAMADA ET AL.	
	Examiner	Art Unit	
	Dennis Rosario-Vasquez	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/11/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2,3,6,8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. (US Patent 5,831,688 A).

Regarding claim 1, Yamada et al. discloses an apparatus for re-coding an image signal, which conducts re-coding processing using a decoded image signal subjected to coding processing as an input image signal, comprising:

a) a DCT unit (fig. 1A,num. 3:TRANSFORMER) for subjecting (An image signal is inputted to the transformer 3 via numeral 2.) the input image signal (fig. 1A, num. 101a.) to a discrete cosine transform (DCT);

b) a DCT coefficient counter (fig. 1A,num. 4:QUANTIZER outputs results 105 based on a count.) for counting a feature amount (The quantizer counts the number of non-zero coefficients as mentioned in col. 7, lines 24-30) on a picture basis (The count is based on an image mode as mentioned in col. 7, lines 24-30.) using a DCT coefficient (Fig. 1A, num. 104) output from said DCT unit (Fig. 1A,num. 3:TRANSFORMER);

c) a picture type detector (Fig. 1A, num. 10: MOTION COMPENSATION PREDICTOR) for detecting a picture type (Fig. 1A,num. 113a corresponds to image types of I or P or B picture types as mentioned in col. 5, lines 48-52.) in coding processing in a previous stage (Fig. 1B is a previous coding stage that generates the signal 113a in relation to the coding process of fig. 1A.), using (Fig. 1A,num. 10: MOTION COMPENSATION PREDICTOR uses the result of the count from fig. 1A, num.4: QUANTIZER as shown by the loop from 4,6,7,8,9,10,2 and 3.) the feature amount (The quantizer counts the number of non-zero coefficients as mentioned in col. 7, lines 24-30) output (fig. 1A,num. 105 is a result of the count.) from said DCT coefficient counter (Fig. 1A,num. 4:QUANTIZER);

d) a coding control portion (fig. 1A,num. 4:QUANTIZER has an additional output 106.) for determining coding parameters (Fig. 1A,num. 106 are quantized parameters as mentioned in col. 7, lines 13-18.) in re-coding in accordance (The coding parameters are determined in accordance of the above mentioned loop that uses a detector 10.) with detection results (Fig. 1A,num. 112) of said picture type detector (Fig. 1A, num. 10: MOTION COMPENSATION PREDICTOR); and

e) a coding portion (Fig. 1A, num. 5:VARIABLE LENGTH CODER) for conducting re-coding processing, using the coding parameters (Fig. 1A,num. 106) determined by said coding control portion (Fig. 1A,num. 4:QUANTIZER).

Regarding claim 2, Yamada et al. discloses the apparatus for re-coding an image signal according to claim 1, wherein said picture type detector (Fig. 1A, num. 10: MOTION COMPENSATION PREDICTOR) includes, as a picture type to be detected, at least two of three kinds of picture types of an intra frame coding picture, a forward inter-frame predictive coding picture, and a bi-directional inter-frame predictive coding picture (Fig. 5 shows the claimed three types of images to be detected by the detector 10).

Regarding claim 3, Yamada et al. discloses the apparatus for re-coding an image signal to claim 1,

a) wherein said DCT coefficient counter counts (fig. 1A,num. 4:QUANTIZER outputs results 105 based on a count.), as a feature amount (The quantizer counts the number of non-zero coefficients as mentioned in col. 7, lines 24-30), a sum (Fig. 1A,num. 8 is an adder) of absolute values (The adder 8 adds coefficients as mentioned from col. 1, line 65 to col. 2, line 4.) on a frequency region basis of DCT coefficients (Fig. 1A, num. 4:QUANTIZER receives "low frequency zone" transform coefficients in col. 7, lines 41,42.), and

b) said picture type detector detects (Fig. 1A, num. 10: MOTION COMPENSATION PREDICTOR) a picture type (Fig. 5 shows three picture types to be detected.) in accordance with variations with time (The images of fig. 5 is a sequence of images.) of the sum (Fig. 1A,num. 8 is an adder) of absolute values (The adder 8 adds coefficients as mentioned from col. 1, line 65 to col. 2, line 4.) thus obtained (The result of the addition 110 is inputted to the detector 10 via 9 in fig. 1A.).

Regarding claim 6, Yamada et al. discloses the apparatus for recoding an image signal according to claim 1,

wherein said DCT coefficient counter counts (fig. 1A,num. 4:QUANTIZER outputs results 105 based on a count.), as a feature amount , the number of DCT coefficients (The quantizer counts the number of non-zero coefficients as mentioned in col. 7, lines 24-30) whose absolute values are larger ("If a number of non-zero transform coefficients 104a...exceeds a value...(col. 7, lines 24-30.") than previously set threshold values ("exceeds a value prespecified " in col. 7, line 28.), and

said picture type detector detects (Fig. 1A, num. 10: MOTION COMPENSATION PREDICTOR) a picture type (Fig. 5 shows three picture types to be detected.) in accordance with the obtained number (Fig. 1A,num. 105, which is a result of the obtained number, is inputted to the detector 10 via numerals 6,7,8,9.).

Claim 8 has been addressed in claim 1.

Regarding claim 9, Yamada et al. discloses the apparatus for re-coding an image signal according to claim 1, wherein said coding control portion (fig. 1A,num. 4:QUANTIZER has an additional output 106.) determines coding parameters (fig. 1A,num. 106), using an intended coding amount (The parameter 106 can be used to set a size or frame rate in col. 1, lines 22-24.) set in accordance (The parameter to set the frame rate is set in accordance of the I, P or B pictures.) with the picture type (Fig. 1A,num. 113a corresponds to image types of I or P or B picture types as mentioned in col. 5, lines 48-52.) detected by the picture type detector (Fig. 1A, num. 10: MOTION COMPENSATION PREDICTOR).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (Us Patent 5,831,688 A) in view of Senoh (US Patent 6,785,429 B1).

Regarding claims 4,5 and 7, Yamada et al. does not teach the limitations of claims 4,5 and 7, but does suggest using non-zero values that are compared to a pre-specified value for each type of picture mode as mentioned in col. 7, lines 24-30. Yamada et al's use of non-zero values suggests taking an absolute value.

However, Senoh, in the field of endeavor of multimedia, teaches absolute values , as suggested by Yamada et al., that are compared to a value for all data in col. 14, lines 55-67.

Senoh teaches claim 4 of a picture type detector detects (Fig. 1,num.22: Feature extraction/retrieval engine extracts, thus detects.), as an intra frame coding picture (fig. 1, num. 21:Feature data memory has frames as mentioned in col. 14, line 11), a picture (A frame from 21 is detected by 22.) whose sum of absolute values (The frame from 21 is used to obtain a sum of absolute values in col. 14, lines 13,14.) is in a high-frequency region (Absolute values are obtained for all "frequency component values" as mentioned in col. 14, line 6-15.) is smaller (The frequency component or feature data with the smallest sum of all other frequency components as mentioned in col. 14, lines

15,16.) than those of previous and subsequent pictures (The smallest sum corresponds to a frame with "respective frames" in col. 14, lines 6-11.).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Yamada et al.'s teaching of using a non-zero value with Senoh's teaching of absolute values, because the absolute value "designates the most approximate feature data (col. 14, line 16,17)."

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (Us Patent 5,831,688 A) in view of Yagasaki (US Patent 5,486,862 A).

Regarding claim 5, Yagasaki teaches claim 5 of a picture type detector detects (Fig. 7, num. 31:intra-/inter-frame discriminator), as an forward inter-frame coding picture (Fig. 7, num. 31 detects an inter-frame.), a picture ("Sinter" corresponds to an inter-frame in col. 8, lines 38,39.) whose sum of absolute values ("Sinter" is a sum of absolute values in col. 8, lines 38,39.) in a low-frequency region (Sinter or "difference data" is calculated using "DC components" in col. 8, lines 59-62.) is larger (Equation 2 shows Sinter>Sintra. Sinter or the inter-frame picture PC12 is located between intra-frames PC1 and PC2 as shown in figure 1.) than those of previous and subsequent pictures (Fig. 1 shows inter-frame picture corresponding to Sinter at the bottom portion and intra-frame corresponding to Sintra at the top portion.).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Yamada et al. teaching of non-zero values with Yagasaki's teaching of absolute values, because Yagasaki's absolute values reduces the processing as mentioned in col. 8, lines 55-58.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (Us Patent 5,831,688 A) in view of Astle (US Patent 5,557,330 A).

Yamada et al. does not teach the limitations of claim 7, but does suggest using pre-specified values that may be exceeded for each picture mode as mentioned in col. 7, lines 27-29.

Regarding claim 7, Astle teaches claim 7 of a picture type detector detects (Fig. 5,num. 410 detects inter, intra and skipped types as mentioned in col. 6, lines 59-65.), as an intra frame coding picture (Fig. 5 label "F(n)" is an intra type to be detected using the flowchart of fig. 6.), a picture ("INTER BLOCK" of fig. 6 is a picture.) having a smaller number of DCT coefficients (Fig. 6 is a flowchart of the operation of fig. 5,num. 410 where step 614 determines the number of coefficients of the inter picture that is smaller than the number of the intra picture and outputs a "Y" branch to step 616:BLOCK TO BE ENCODED AS INTER BLOCK.) are whose absolute values are larger than threshold values (Step 610:SUM OF ABSOLUTE COEFF DIFFERENCES < THRESHOLD determines the absolute values of the coefficients of the intra picture to be larger and outputs a "N" branch to step 614.) and a picture (SKIPPED BLOCK of fig. 6,num. 612) having a larger number of DCT coefficients (The SKIPPED BLOCK can have a number of coefficients that are larger or smaller than the number of coefficients of the.) whose absolute values are smaller than threshold values (The "Y: branch of step 610).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Yamada et al.'s teaching of pre-specified values with Astle's

teaching of thresholds for each picture type or mode as suggested by Yamad et al., because Astle's teaching of thresholds can filter noise as mentioned in col. 7, lines 55-63.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fujiwara et al. (US Patent 6,683,989 B1) is pertinent as teaching a method of a counter in fig.1, num. 110:ANALYZER that counts bits and outputs corresponding coefficients as mentioned in col. 4, lines 16-19.

Suzuki et al. (US Patent 6,496,228 B1) is pertinent as teaching a method of counting a number of frames with a threshold as shown in fig. 10,num.1004.

Sugano et al. (US Patent 6,473,459 B1) is pertinent as teaching a method comparing numbers of blocks Nfwb and Nbwd with a threshold in equation 7 of column 6.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario-Vasquez whose telephone number is 703-305-5431. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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